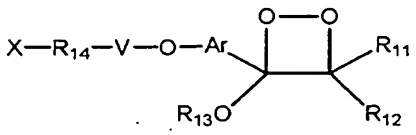
AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

Claims 1 and 2 (Canceled):

Claim 3 (Currently Amended): A 1,2-dioxetane derivative of the formula (III):



(III)

wherein

Ar is an aryl group which may have an alkyl group, an aryl group, a halogen atom, an alkoxyl group, a carboxyl group, a formyl group, an alkyl ester, an aryl ester, an alkylketone, an arylketone or a hetero ring bonded thereto,

X is a substituent capable of labeling an organic compound or a biological molecule, or an ester,

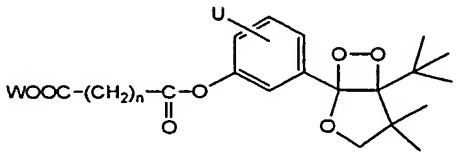
V is a carbonyl group or a group of the formula $-Si(R_{15}R_{16})-$, ~~(~~wherein each of R_{15} and R_{16} which are independent of each other, is an alkyl group or an aryl group~~)~~,

each of R_{11} and R_{12} which are independent of each other, is a hydrogen atom, an alkyl group or an aryl group, or R_{11} and R_{12} may together form a cyclic or polycyclic organic ring group spiro-bonded to the dioxetane ring,

R_{13} is an alkyl group or an aryl group, or R_{13} and R_{11}, or R_{13} and R_{12}, may together form a condensed ring containing the dioxetane ring and a hetero atom, and

R_{14} is a spacer.

Claim 4 (Original): The 1,2-dioxetane derivative according to Claim 3, which is a 1,2-dioxetane derivative of the formula (IV):



(IV)

wherein

n is an integer of from 1 to 20,

W is a hydrogen atom, an alkyl group or a succinimido substituent, and

U is a hydrogen atom, an alkyl group, an aryl group, a halogen atom, an alkoxyl group, a carboxyl group, a formyl group, an alkyl ester, an aryl ester, an alkylketone, an arylketone or a hetero ring.

Claims 5 (Canceled):

Claim 6 (Original): A chemiluminescent reagent which contains the 1,2-dioxetane derivative as defined in Claim 3.

Claims 7 and 8 (Canceled):

Claim 9 (Original): An immunoassay reagent wherein the 1,2-dioxetane derivative as defined in Claim 3 is bonded to a substance having a specific affinity via a part of its X.

Claim 10 (Original): An immunoassay reagent wherein the 1,2-dioxetane derivative as defined in Claim 4 is bonded to a substance having a specific affinity via a part of its W.

Claim 11 (New) A method of detecting a substance, comprising:

mixing the immunoassay reagent according to Claim 9 and said substance to be detected or a mixture containing said substance to be detected, to obtain a reaction mixture;

reacting said reaction mixture to bond said substance to be detected with said immunoassay reagent; and

measuring the amount of immunoassay reagent which was bonded or not bonded to said substance to be detected.

Claim 12 (New) The method according to Claim 11, wherein said immunoassay reagent is decomposed in the presence of fluorine ions or under an alkaline condition, wherein said decomposition is accompanied by chemiluminescence, and an intensity of said luminescence is measured.

Claim 13 (New) The method according to Claim 11, wherein said substance to be detected is selected from the group consisting of hormones, cancer-related substances, viral antigens, viral antibodies and nucleic acids.

Claim 14 (New) The method according to Claim 11, wherein said substance to be detected is selected from the group consisting of hCG, TSH, LH, AFP, CEA, HIV, HTLV-I, DNA and RNA.

Claim 15 (New) The immunoassay reagent according to Claim 9, wherein said substance having a specific affinity is one having a specific affinity to the substance to be detected.

Claim 16 (New) The immunoassay reagent according to Claim 9, wherein said substance having a specific affinity is an antibody or a receptor.

Claim 17 (New) The immunoassay reagent according to Claim 10, wherein said substance having a specific affinity is one having a specific affinity to the substance to be detected.

Claim 18 (New) The immunoassay reagent according to Claim 10, wherein said substance having a specific affinity is an antibody or a receptor.